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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,151	10/17/2000	Bradley Engstrand	MOT-P-00-001	2732

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EXAMINER

LUU, THANH X

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 02/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/690,151

Applicant(s)

ENGSTRAND, BRADLEY

Examiner

Thanh X Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claim 19 is objected to because of the following informalities:

In claim 19, "said output signal" lacks proper antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 11, it is unclear in its given context to what extent a first end wall "substantially" encloses an interior and exterior wall since the specification fails to mention an exterior wall. Furthermore, assuming the outer surface of 10 (see Figure 1) is an exterior wall, it is unclear in its given context how the end wall (15) "substantially encloses" the exterior wall as the exterior wall is "exterior" to the apparatus.

Claims 2-10 and 12-16 are indefinite by virtue of their dependency on an indefinite claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 10, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori et al. (U.S. Patent 4, 661,695).

Regarding claims 1 and 10, Mori et al. disclose (see Figure 1) an apparatus for measuring displacement, comprising: a machine element (2) having an interior wall, an exterior wall and a first end wall (between V1 and V2) enclosing the interior wall; a shaft element (attached to 3) within the machine element; a head element (3) attached to the shaft element adjacent to the interior wall; a light source (within 4; 44 of Figure 2) attached to the machine element; and a sensor (45 of Figure 2) attached to the machine element and positioned to detect intensity of light within the machine element. Mori et al. further disclose (see Figure 2) an additional sensor (other instance of 45) attached to the machine element and positioned to detect intensity of light within the machine element.

Regarding claims 17 and 18, Mori et al. disclose (see Figure 1) a method of measuring displacement of a machine element, comprising: providing a machine element (2) having an interior, an exterior wall and an end wall (between V1 and V2); providing a shaft element (attached to 3) capable of movement within the machine element; attaching a head element (3) to the shaft element; positioning the head

element adjacent to the interior wall; attaching a light source and sensor (44, 45; see Figure 2) to the machine element; and measuring intensity of light within the machine element from reflected light detected by the sensor. Mori et al. further disclose (see Figures 4-7) moving the shaft element and producing an output signal as the shaft element moves within the machine element.

7. Claims 11, 12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Lowi, Jr. (U.S. Patent 5,799,629), hereinafter, Lowi.

Regarding claims 11, 12 and 14, Lowi discloses (see Figures 1 and 6) an apparatus for cleaning a machine component, comprising: a machine element (cylinder) having an interior wall, an exterior wall and an end wall enclosing the interior wall; a shaft element (piston shaft; 75 of Figure 6) movable within the machine element; and a head element (piston) attached to the shaft element and adjacent to the interior wall of the machine element; and a first brush and second brush (77) positioned at the end wall of the machine element in contact with the shaft element. Lowi further discloses (see Figure 1) a seal (30) disposed around the shaft.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al.

Regarding claim 19, Mori et al. further disclose (see Figures 4 and 5) providing a processing unit that receives an output signal. Mori et al. do not specifically disclose displaying the output signal. However, it is notoriously well known in the art to display output signals in order to present the data in a more intelligible way for people to understand. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to display the output signal of Mori et al. to more quickly convey the data to people using the method.

Regarding claim 5, a second end wall is inherently present in the apparatus of Mori et al. to seal the combustion chamber. Mori et al. do not specifically disclose a groove in the second end wall. However, having a groove in an end wall is a matter of design choice. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a groove in the second end wall of Mori et al. to lighten the device.

10. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Smietana (U.S. Patent 5,231,959).

Regarding claims 2 and 3, Mori et al. disclose the claimed invention as set forth above. Mori et al. do not specifically disclose a coating on the shaft element or the interior wall. Smietana teaches (see column 3, lines 15-20) a coating on a shaft element and interior wall of a similar device. Smietana further recognizes that such coatings prevent galling. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the coatings as claimed in the

apparatus of Mori et al. in view of Smietana to prevent galling and improve the operation of the device.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lowi in view of Smietana.

Regarding claim 13, Lowi discloses the claimed invention as set forth above. Lowi does not specifically disclose a coating on the shaft element. Smietana teaches (see column 3, lines 15-20) a coating on a shaft element and interior wall of a similar device. Smietana further recognizes that such coatings prevent galling. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the coatings as claimed in the apparatus of Lowi in view of Smietana to prevent galling and improve the operation of the device.

12. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowi in view of Mori et al.

Regarding claims 14 and 15, Lowi discloses the claimed invention as set forth above. Lowi does not specifically disclose a light source or a sensor as claimed. Mori et al. teach (see Figures 1 and 2) a light source (44) attached to a machine element or a sensor (45) positioned to receive reflected light within the machine element. Thus, Mori et al. recognize that a light source and sensor allows for position sensing of the piston. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a light source and sensor in the apparatus of Lowi in view of Mori et al. to monitor the position of the piston and therefore improve the operation of the device.

13. Claims 4, 6, 8, 9 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Lowi.

Regarding claims 4 and 20, Mori et al. disclose the claimed invention as set forth above. Mori et al. do not specifically disclose a seal. Lowi teaches (see Figure 1) providing a seal (30) at an end wall. Thus, Lowi recognizes that seals help isolate the interior of the machine element from the exterior. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a seal as claimed in the apparatus of Mori et al. in view of Lowi to seal the interior of the machine element from dirt and particles from the exterior.

Regarding claims 6, 8, 9, 21 and 22, Mori et al. disclose the claimed invention as set forth above. Mori et al. do not specifically disclose a brush. Lowi teaches (see Figure 6) a brush (77) attached to the machine element. Lowi also discloses (see column 13, line 65) a brush constructed from bronze. Lowi further recognizes that brushes help clean the shaft in the machine element. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide brushes in the apparatus of Mori et al. in view of Lowi to clean the shaft element of the machine element and improve the operation of the device.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Lowi, and further in view of Brunet et al. (U.S. Patent 6,170,573).

Regarding claim 7, Mori et al. in view of Lowi disclose the claimed invention as set forth above. Mori et al. and Lowi do not specifically disclose a wire brush. Brunet et al. teach (see column 10, lines 45-60) a wire brush for cleaning a machine element.

Thus, Brunet et al. recognize that wire brushes are effective in cleaning machine elements. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a wire brush in the apparatus of Mori et al. in view of Lowi and Brunet et al. to more effectively clean the apparatus.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
February 19, 2003


Thanh X. Luu
Patent Examiner